

Remarks

Claims 39, 45, 70, 81 and 82 have been amended for clarification and to put the claims in better form for allowance. No new matter has been added. Support for these amendments can be found throughout the instant specification. For example, support for the amendment to claim 70 can be found at page 15, lines 16 - 17. To advance prosecution of the instant specification and simplify current issues, claims 71-80 have been canceled. Applicants retain the right to present this subject matter in a continuing application.

Rejection Under 35 U.S.C. § 103(a)

The Examiner has rejected claims 39-50, 52-82 and 84-92 under 35 U.S.C. § 103(a) as allegedly being obvious in view of the Portner and Märkl reference. The Examiner contends that it would have been obvious to one skilled in the art to supply air to the dialysis fluid of the instant invention because Figure 3b of the Portner and Märkl reference describes air being supplied to the dialyzing chamber.

A *prima facie* case of obviousness can only be established where there is some teaching of the prior art to produce the instant invention. As the Examiner points out, the Portner and Märkl reference discloses that when cells are pumped through the external module, the cells can suffer from oxygen limitation (page 404). The reference suggests this was one of the reasons persons skilled in the art abandoned the two-vessel dialysis reactor approach and turned to the alternative single-vessel dialysis reactor. Furthermore, the Portner and Märkl reference is a mini-review that supports the view that the field "as a whole" abandoned the two-vessel strategy and moved toward the single-vessel reactor. The prior art reference provides historical evidence that the field turned away from the two-vessel reactor by showing the desirability of single-vessel reactor. The reference describes reasons why the two-vessel approach had been abandoned by the field and, thus, in teaching

away from the present invention clearly fails to establish a *prima facie* case of obviousness.

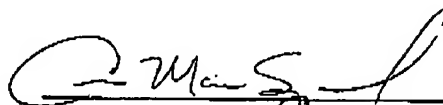
Prima facie obviousness does not exist without some reason given in the prior art as to why one of ordinary skill in the art would have been prompted to make such a modification. No such reason exists in the Portner and Märkl reference. Air is supplied to the dialyzing chamber of Figure 3b for the sole purpose of avoiding disrupting cell adhesion to the fixed bed. Pumping air directly into the culture chamber of Figure 3b would create turbulence that would compromise cell adhesion to the fixed bed and therefore is not analogous art to the claimed invention. Instead, if supplying air to the dialysis chamber with the intent to maximize gas supply to free-floating cells had been the motivation for doing so in Figure 3b, then Figure 3a would be expected to show gas being pumped into the dialysis chamber and the culture chamber. Figure 3a clearly does not show this in the diagram nor is it contemplated in the text. When the prior art itself provides no apparent reason to make the modification, the claimed subject matter of the instant application cannot be deemed to have been obvious.

Accordingly, a *prima facie* case of obviousness has not been established in view of the Portner and Märkl reference. Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. § 103(a).

This amendment advances prosecution by canceling claims, amending claims, complying with requirements of form and placing claims in better form for appeal should an appeal be necessary. These responsive amendments are not believed to raise new issues before the Examiner. Accordingly, entry of this amendment is respectfully requested. In view of the amendment and associated Remarks reconsideration and withdrawal of all outstanding rejections are deemed proper.

Applicants respectfully submit that the application is now in condition
for allowance and request notice thereof.

Respectfully submitted,



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